QUESTION THREE

3. What is the appropriate density or range of densities (fixed or sliding) for each land use area and what is the appropriate pattern of development (cluster or large lot)?

The purpose of this section is to provide a comparison of fixed and sliding scale density concepts and patterns of development. For specific information on sliding scale density see June 16, 2000 memo and June 22,2000 handout.

- The Planning Commission Committee of the Whole has discussed the compatibility of current rural residential densities and pattern of development in the Rural Policy Area, with rural character, groundwater resources, road network, green infrastructure, and rural economy.
- Staff has provided detailed reports and data to the Commission regarding the compatibility of the existing rural development pattern with each of those policy subject areas.
- The Commission has found that the existing rural residential density (.33 du/acre – or 1 du per 3 acres), is not compatible with the desire to preserve rural character features, groundwater resources, green infrastructure, rural road network, and rural economy.

Sliding Scale Density

The pro's of sliding scale density are as follows:

- Reduces residential density as the parcel size increases, helping to preserve large parcels for agricultural purposes.
- Recognizes existing small parcels and provides a minimum density regardless of size.
- Used effectively in both Clarke and Fauquier Counties - adjacent to Loudoun County.
- Reduced density also reduces impact on roadways and capital facilities.

The con's of sliding scale density are as follows:

- Does not treat all properties equally in terms of density potential – large parcels have less density potential than small ones.
- Is not particularly effective in Rural residential areas where the desired lot sizes are less than in Rural agricultural Areas.
- Slightly more difficult to calculate density for the average property owner.
- May result in unintended design depending on the manner in which density is calculated and siting of lots.

A comparison of Clarke and Fauquier County's sliding scale zoning identifies two levels of development density permitted within the jurisdictions. Clarke County is the more restrictive of the two counties. For example, for 6 dwelling units, Clarke County allows this number of dwellings on 180 to 229.99 acres (1 du/ 30 acres to 1 du/ 38 acres). However, Fauquier County permits 6 dwellings on 80 to 104.99 acres (1 du/13 acres to 1 du/ 17.5 acres).

Comparison of Sliding Scale Densities

D.U.	Clarke Co.	i	Fauquier Co.	i	Custom	i
1	0-14.99	15	0-9.99	10	0-11.99	12
2	15-39.99	25	10-19.99	10	12-24.99	13
3	40-79.99	40	20-34.99	15	25-49.99	25
4	80-129.99	50	35-54.99	20	50-74.99	25
5	130-179.99	50	55-79.99	25	75-104.99	30
6	180-229.99	50	80-104.99	25	105-139.99	35
7	230-279.99	50	105-129.99	25	140-179.99	40
8	280-329.99	50	130-154.99	25	180-224.99	45
9	330-399.99	70	155-179.99	25	225-274.99	50
10	400-499.99	100	180-204.99	25	275-324.99	50
11	500-599.99	100	205-254.99	50	325-374.99	50
12	600-729.99	130	255-304.99	50	375-424.99	50
13	730-859.99	130	305-354.99	50	425-474.99	50
14	860-1029.99	170	355-404.99	50	475-524.99	50
15	1030 +	fixed	405-454.99	50	525-574.99	50

See Sliding Scale Handout for additional Information

Sliding scale zoning design can be better understood by reviewing the interval acreage (i) listed in the table for each acreage range assigned to permitted dwelling units. The intervals represent the rate at which density decreases as parcel size increases. Clarke County's intervals jump quickly through the ranges rising to 50-acre intervals at just 4 dwellings and reaching 100 acres at 10 dwellings. Fauquier County's intervals hold 25-acre intervals beginning at 5 dwellings, and jump to 50 acres at 11 dwellings. Overall, Clarke County imposes a restrictive density range between 1 du/ 15 acres and 1 du/ 68 acres (for up to 15 dwelling units). Fauquier County imposes a less restrictive density range between 1 du/ 10 acres and 1 du/ 30 acres (for up to 15 dwelling units).

If Loudoun County is to consider using a sliding scale zoning method, then a customized approach is recommended to adjust for lot sizes typical to the jurisdiction and consistent with the general intent of the policy recommendations for development in the Rural Policy Area. This could be more or less restrictive than the adjoining jurisdictions depending on the purpose to be achieved.

Fixed Density.

The pro's of fixed density are as follows:

- Treats all properties equally in terms of density potential
- Consistent with current policies and regulations which use a fixed-density
- Easy to calculate and apply in both Rural Agriculture and Rural residential Areas.

The con's of fixed density are as follows:

- Inflexible
- Lower fixed densities may diminish development potential for smaller parcels.

Research from other Jurisdictions

Fauquier County, VA – Sliding Scale Density ranging from 1 dwelling per 10 acres up to 1 dwellling per 50 acres. Fixed density of 1 dwelling per 50 acres permitted as a no subdivision process. Under sliding scale, development units are restricted to 15% of the land (for original parcels above 30 acres), and 85% of the land is retained as one parcel.

Clarke County, VA – Sliding Scale Density ranging from 1 dwellling per 15 acres up to 1 dwelling per 68 acres and lower. Maximum number of lots is fixed at 15 units for parcels of 1030 acres or more. Lots created must average two acres each, with adjustments for environmental and Health Department requirements.

Albemarle County, VA– Set a base period in time (December 10, 1980) from which all development rights are determined. Every parcel gets 1 Development Lot for every 2 acres up to the first 10 acres. The maximum total acreage for those 5 lots is 31 acres (31/5 = 6+ acre lots). Can also develop by-right at 1 per 21 acres because 20 acres is the minimum necessary for their use-value taxation program (with 1 acre for house lot).

Fayette County, KY – Minimum parcel size restricted to 40 acres for purposes of agriculture, minimizing traffic and infrastructure needs. The Plan states."10-acre lots have resulted in serious erosion of the land area available for agricultural use.It is apparent that the 10-acre lot requirement consumes land inefficiently, and is no longer effective in addressing the preservation of the rural area."

Multnomah County, WA– Created Rural residential and Agricultural Land Areas. Rural residential is based on significant parcelization averaging 5 acres or less, not a cohesive commercial farm or forest resource area, compatible with adjacent farm or forest areas, and the land resource is predominantly forest or forest-agriculture in nature rather than agricultural in character. Agricultural Land is based on predominant agricultural soil capability, parcel sizes suitable for commercial agriculture, predominantly commercial agricultural use, not impacted by urban service, and surrounded by other commercial agricultural lands.

Yakima County, Washington – Based upon capital facility levels of service:
Rural settlement – 4 du/acre with water and sewer
Rural transitional – 1 du/2.5 acres or 1 du/ 2 acres with clustering and a community water system
Rural remote – (steep slopes and floodways) 1 du/ 40 acres.
Rural Self sufficient – 1 du/10 acres with well and septic, or 1 du/5 acres on a paved road within 5 miles of a fire station.

Research from other Profession Planning Resources

Views from Randall Arendt from Growing Greener: Putting Conservation into Local Plans and Ordinances. Island Press, Washington, DC. 1999.

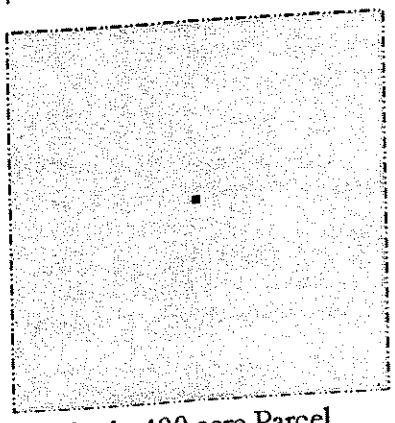
> *Just as agricultural densities of 20 and 30 acres per dwelling have been determined to be appropriate in certain Pennsylvania counties where serious farming occurs (such as Lancaster).. P. 31*
>
> *The reason that a density of 80,000 square feet per dwelling has been used in this book is that case law in Pennsylvania strongly suggests that municipalities may not require lots larger than 80,000 square feet - except where farmland protection is a well-documented policy goal, as typified in many parts of Lancaster County. P. 30*
>
> *The 80,000 square feet overall density (about 1.8 acres pre dwelling) approaches the legal limit suggested by a number of judicial precedents in Pennsylvania for suburban-edge and rural areas where there is no explicit, serious commitment to continued large-scale agricultural production - as would be evidenced through landowner support for exclusive agricultural zoning of 20 to 30 acres per dwelling, as many townships in Lancaster County have adopted. P. 31*

Views from Tom Daniels from When City and Country Collide, Island Press, Washington, DC. 1999.

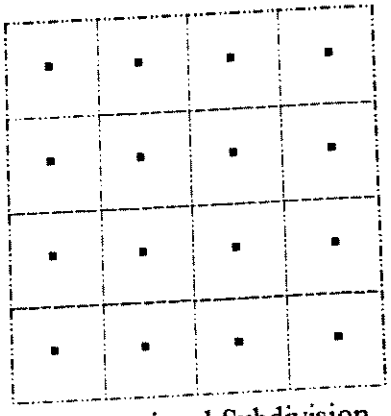
> This author identifies that 2 to 10 acre lots eat up the landscape in large bites, creating areas too large to mow and too small to plow. Concerns are expressed with regard to cluster development needs for appropriate sewer and water. Also, many clusters in the countryside can lead to clustered sprawl, and developers may tend to skip over more difficult infill parcels that should be developed first. Therefore, low overall densities with clustering can preserve open space and environmental features.

Examples of Density/Pattern of Development Options

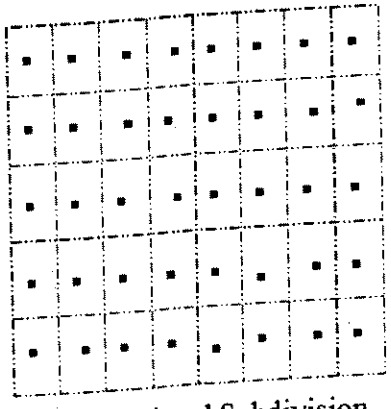
The following are generic examples of the interrelationship between density, parcel size, and pattern of development.



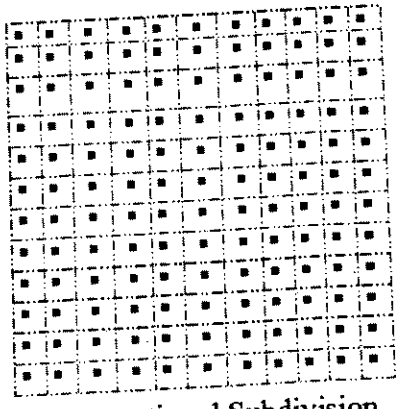
Single 400 acre Parcel
1 residence



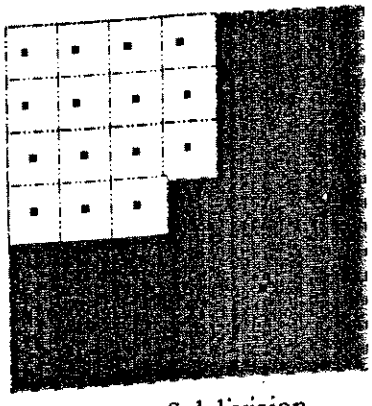
Conventional Subdivision
25 Acre Density
16 lots/Du's



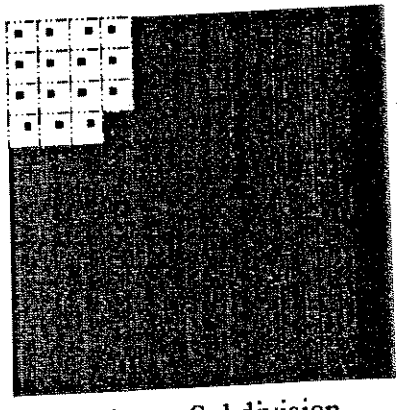
Conventional Subdivision
10 Acre Density
40 Lots/Du's



Conventional Subdivision
3 Acre Density
133 Lots/Du's



Cluster Subdivision
25 Acre Density
15 - 10 acre lots
1 - 250 acre lot



Cluster Subdivision
25 Acre Density
15 - 3 acre lots
1 - 355 acre lot

QUESTION THREE - OPTIONS

Options A through D are applicable for multiple land use areas in Rural Loudoun (Question 1- Option B).
Options E and F are applicable for a single land use area in Rural Loudoun (Question 1 – Option A).

Option A:

Rural agricultural area

25 acres per unit – fixed density – required clustering or
50 acres per unit – fixed density – large lot

Rural residential area

10 acres per unit – fixed density – required clustering or
25 acres per unit – fixed density – large lot

Pros:

- Separates predominantly agricultural areas from predominantly residential areas reducing conflicts between potentially incompatible uses.
- Provides for a variety of parcel sizes within both land use areas.
- Clustering for the higher density option in both land use areas has been found to help protect rural character features and provides design flexibility on the parcel.
- Can maintain large parcels for open space and agricultural purposes.
- Reduction of density should reduce impacts on roads, groundwater and capital facilities.
- Maintains equal potential density levels for all parcel sizes.

Cons:

- Residential clusters in an agricultural area may present conflicts between residential and agricultural uses.
- May encourage the elimination of agricultural uses in rural residential areas.
- May effect a change in the character of the Rural Policy Area.

Option B:

Rural agricultural area

20 to 50 acres per unit – sliding scale – required clustering or
50 acres per unit – large lot

Rural residential area

10 acres per unit – fixed density – required clustering or
25 acres per unit – fixed density – large lot

Pros:

- Separates predominantly agricultural areas from predominantly residential areas reducing conflicts between potentially incompatible uses.
- Provides for a variety of parcel sizes within both land use areas.
- Sliding scale reduces residential density as the parcel size increases, helping to preserve large parcels for agricultural purposes.
- Sliding scale recognizes existing small parcels and provides a minimum density regardless of size.
- Reduced density also reduces impact on roadways and capital facilities.

Cons:

- Residential clusters in an agricultural area may present conflicts between residential and agricultural uses.
- May encourage the elimination of agricultural uses in rural residential areas.
- May effect a change in the character of the Rural Policy Area.

Option C:

Rural agricultural area

10 to 50 acres per unit – sliding scale – large lot (no clustering)

Rural residential area

10 acres per unit – fixed density – required clustering or
5 acres per unit – fixed density –required clustering with stringent performance standards

Pros:

- Separates predominantly agricultural areas from predominantly residential areas reducing conflicts between potentially incompatible uses.
- Provides for a variety of parcel sizes within both land use areas.
- No residential clusters in the agricultural area helps decrease potential for ag/residential conflict.
- Sliding scale reduces residential density as the parcel size increases, helping to preserve large parcels for agricultural purposes.
- Sliding scale recognizes existing small parcels and provides a minimum density regardless of size.
- Reduced density also reduces impact on roadways and capital facilities.
- Lure of five acre density is an incentive to implement stringent performance standards.

Cons:

- Sliding scale does not treat all properties equally in terms of density potential – large parcels have less density potential than small ones.
- Sliding scale may result in unintended design depending on the manner in which density is calculated and siting of lots.
- Five acre density (clustered) in the residential area – even with performance standards may not preserve rural character as well as lower densities.

Option D:

Rural agricultural area

15 acres per unit – fixed density – clustered

Rural residential area

7 acres per unit – fixed density - clustered

Pros:

- Separates predominantly agricultural areas from predominantly residential areas reducing conflicts between potentially incompatible uses.
- Clustering has been found to help protect rural character features and provides design flexibility on the parcel.
- Can maintain large contiguous acreage for open space and agricultural purposes.
- Reduction of density from current levels should reduce impacts on roads, groundwater and capital facilities.
- Maintains equal potential density levels for all parcel sizes.

Cons:

- Residential clusters in an agricultural area may present conflicts between residential and agricultural uses.
- 15 and 7 acre density may not fully achieve the desired rural character preservation, and may have a significant impact on roadway capacities.

Option E: **Single Rural Area**

5-40 acres per unit – sliding scale – clustered (Fauquier County Model) or
50 acres per unit - fixed

Pros:

- Provides for a variety of parcel sizes
- Reduces residential density as the parcel size increases, helping to preserve large parcels for agricultural purposes.
- Recognizes existing small parcels and provides a minimum density regardless of size.
- Reduced density also reduces impact on roadways and capital facilities.

Cons:

- Sliding scale does not treat all properties equally in terms of density potential – large parcels have less density potential than small ones.
- Sliding scale may result in unintended design depending on the manner in which density is calculated and siting of lots.

Option F: **Single Rural Area**

10 acres per unit – fixed – clustered
25 acres per unit – fixed – large lot

Pros:

- Provides for a variety of parcel sizes within both land use areas.
- Clustering for the higher density option in both land use areas has been found to help protect rural character features and provides design flexibility on the parcel.
- Can maintain large parcels for open space and agricultural purposes.
- Reduction of density should reduce impacts on roads, groundwater and capital facilities.
- Maintains equal potential density levels for all parcel sizes.

Cons:

- Residential clusters in an agricultural area may present conflicts between residential and agricultural uses.
- May ultimately reduce agricultural opportunities given the potential for limited lot sizes.
- May reduce the variety of lot sizes.

Staff Recommendation:

Staff recommends Option B on the basis that it provides for a variety of parcel sizes within both land use areas. It separates predominantly agricultural areas from predominantly residential areas reducing conflicts between potentially incompatible uses. Sliding scale reduces residential density as the parcel size increases, helping to preserve large parcels for agricultural purposes. Sliding scale recognizes existing small parcels and provides a minimum density regardless of size. Reduced density also reduces impact on roadways and capital facilities.

EVALUATION OF EFFECTIVENESS

In terms of:

- Preservation of Rural Character Features
- Preservation of Green Infrastructure
- Preservation of Rural Road Character and Capacity
- Preservation of Groundwater Resources
- Preservation of Prime Farmland Soils
- Enhances Rural Economy

	Acres Per Dwelling Unit (Density)								
	3	**5**	**7**	**10**	**15**	**25**	**50**	**75**	**100**
Conventional (Large Lot)	0	0	2	3	4	6	8	9	10
Cluster	0	2	3	6	8	10	10	10	10

1----------5----------10

Not Effective **Some Effectiveness** **Very Effective**

Note: All ratings are based on staff's assessment of factual and anecdotal evidence regarding effectiveness of various development options.